

## Claims

1. A peptide trimer in which three peptides of the same chain length having a repeating unit as a fundamental structure represented by the formula:



wherein X and Y each represent any amino acid residue are tethered to one another such that they are shifted relative to one another in the backbone direction.

2. The peptide trimer according to claim 1, wherein the three peptides are tethered to one another via a disulfide bond.

3. The peptide trimer according to claim 1 or 2, wherein among the three peptides, two peptides each have one Cys residue and the other one peptide has two Cys residues.

4. The peptide trimer according to any one of claims 1 to 3, wherein 30% or more of X is Pro and 30% or more of Y is Pro or Hyp in the whole molecule of the peptide trimer.

5. A method of producing the peptide trimer according to claim 1, comprising the steps of:

preparing a first peptide having one Cys residue, a second peptide having two Cys residues, one of which has a

protected SH group, and a third peptide having one Cys residue;

forming a peptide dimer by linking the first peptide to the second peptide via a disulfide bond;

activating the protected SH of the second peptide by converting the protecting group; and

linking the peptide dimer and the third peptide via a disulfide bond.

6. A molecular aggregate having a triple helix structure comprised of the peptide trimer according to any one of claims 1 to 4.

7. A method of producing the molecular aggregate according to claim 6, comprising holding a solution of the peptide trimer according to any one of claims 1 to 4 at a temperature between 0 and 40°C for 1 hour or longer.